

**DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 16
Central Mountains
See Also
Deer Herd Unit #12
San Rafael Management Plan**

April, 2012

CENTRAL MOUNTAINS BOUNDARY DESCRIPTION

Utah, Carbon, Emery, Juab, Sevier and Sanpete counties - Boundary begins at the junction of US-6 and I-15 in Spanish Fork; southeast on US-6 to SR-10 in Price; south on SR-10 to I-70; west on I-70 to US-50 at Salina; north on US-50 to I-15 at Scipio; north on I-15 to US-6 in Spanish Fork.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0%	721980	73.8%	300717	28.3%
Bureau of Land Management	24	2.2%	28187	2.9%	224215	21.1%
Utah State Institutional Trust Lands	1039	93.4%	14980	1.5%	110636	10.4%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	50	4.5%	198911	20.3%	353779	33.3%
Department of Defense	0	0%	0	0%	200	0%
USFWS Refuge	0	0%	0	0%	0	0%
National Parks	0	0%	0	0%	0	0%
Utah State Parks	0	0%	23	0%	116	0%
Utah Division of Wildlife Resources	0	0%	14774	1.5%	72704	6.8%
TOTAL	1113	100%	978855	100%	1062367	100%

UNIT MANAGEMENT GOALS

- Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing.
- Balance deer herd impacts on human needs, such as private property rights, agricultural crops and local economies.

- Maintain the population at a level that is within the long term carrying capacity of the available habitat, based on winter range trend studies conducted by the DWR every five years. Using the long term population objective as a guide, the short term objective will be adjusted according to the Desired Components Index (DCI). The DCI measured during range study surveys was created as an indicator of the general health of big game winter ranges. The index incorporates shrub cover, density and age composition as well as other key vegetation variables. Decreases in DCI suggest that winter range carrying capacity has decreased.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size:

< **Long Term Objective-**

Central Mountains, Manti Subunit -	38,000 deer
Central Mountains, Nebo Subunit -	22,600 deer

Total Central Mountains Objective -	60,600 deer
-------------------------------------	-------------

< **Short Term Objective** – Manage deer populations according to range conditions based on DCI scores on winter ranges. All winter ranges were measured in 2007 (Nebo and West Manti) and again in 2009 (east Manti). Data from these studies suggest that DCI scores on all winter ranges are stable to slightly improving. Most winter ranges received a "fair" rating. Thus, there will be no short term population reductions recommended to improve winter range health. Biologists will continue to carefully monitor winter ranges and make recommendations to improve and protect winter habitat. Should over-utilization and range damage by deer occur, recommendations will be made to locally reduce deer populations.

< Herd Composition - A three year average postseason buck to doe ratio in accordance to the statewide plan.

< Harvest - General Season Unit by Unit Buck deer hunt regulations, using Archery, Rifle, and Muzzleloader hunts. Buck permits will be adjusted to maintain buck/doe ratio objectives. Antlerless permits will only be issued to address specific localized depredation or range degradation concerns.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - A population estimate will be made based on fall and spring herd composition counts conducted by biologists, harvest surveys, and mortality estimates based on radio collar studies and range rides. These data will be used in a computer model to determine a winter deer herd population size.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the use of checking stations.

Limiting Factors (May prevent achieving management objectives)

- < Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.
- < Habitat – Winter range is a limiting factor for deer on this unit. Portions of critical winter ranges are in poor condition (See range trend summary below). Factors contributing to poor range conditions include recent droughts and range use by deer and domestic livestock. This has resulted in a reduction of winter range carrying capacity. Utilization of key shrub species on critical winter ranges will be closely monitored.
- < Predation - - Follow DWR predator management policy:
 - If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.
 - If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.
- < Highway Mortality - Cooperate with the Utah Dept. Of Transportation in construction of highway fences, passage structures and warning signs etc. Collect highway mortality data. A Deer Highway Crossing Study along SR-6 is underway.
- < Illegal Harvest - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an Action Plan developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

- < Protect, maintain, and/or improve deer habitat through direct range improvements to support and maintain herd population management objectives.
- < Work with private landowners and, federal, state, local and tribal governments to maintain and protect critical and existing ranges from future losses and degradation.
- < Provide improved habitat security and escapement opportunities for deer.
- < Mitigate impacts from energy development activities.
- < Minimize deer vehicle collisions along highways on the unit.

HABITAT MANAGEMENT STRATEGIES

- < Continue to improve, protect, and restore sagebrush steppe habitats critical to deer. Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as pinion-juniper removal, reseeding, controlled burns, grazing management, water developments etc. on public and private lands. Habitat improvement projects will occur on both winter ranges as well as summer range.

- < Continue to monitor permanent range trend studies located throughout the unit.
- < Conduct cooperative seasonal range rides and surveys to evaluate forage condition and utilization. Determining opportunities for habitat improvements will be an integral part of these surveys.
- < Work toward long term habitat protection and preservation through the use of agreements with federal agencies, local governments and the use of Conservation Easements etc. on private lands.
- < Support, cooperate with, and provide input to land management planning efforts dealing with actions affecting habitat security, quality and quantity.
- < Work with land management agencies and energy companies to minimize and mitigate impacts of energy development activities. Oil and Gas specific habitat biologists will lead this effort.
- < Continue to monitor deer survival on this unit through radio telemetry studies. Use telemetry data to determine potential habitat improvement projects.
- < Utilize antlerless deer harvest to improve or protect forage conditions when vegetative declines are attributed to deer over utilization.

PERMANENT RANGE TREND SUMMARIES

Unit 16a Central Mountains, Nebo Subunit

Average DCI Scores for Low Potential (Low Elevation) and Mid-Level Potential Winter Ranges for the Central Mountains, Nebo Subunit, 1997 - 2007

Low Potential Winter Range

Nebo (n=9)

Year	Score	Ranking
1997		
2002		
2007	5	Very Poor
2012		

Mid-Level Potential Winter Range

Nebo (n=10)

Year	Score	Ranking
1997	50	Fair
2002	44	Poor
2007	40	Poor
2012		

Summary:

Unit 16b and 16c Central Mountains, Manti Subunit (West Side)

Average DCI Scores for Mid-Level Potential Winter Ranges for the West Slope of the Central Mountains, Manti Subunit, 1997 - 2007

**Mid-Level Potential Winter Range
Northwest Manti (n=8)**

Year	Score	Ranking
1997	40	Poor
2002	36	Poor
2007	34	Very Poor
2012		

**Low Potential Winter Range
Southwest Manti (n=9)**

Year	Score	Ranking
1997	39	Fair
2002	30	Fair
2007	38	Fair
2012		

**Mid-Level Potential Winter Range
Southwest Manti (n=4)**

Year	Score	Ranking
1997	51	Fair-Poor
2002	43	Poor
2007	32	Very Poor
2012		

Summary:**Unit 16b Central Mountains, Manti Subunit (Northeast Manti)**

Average DCI Scores for Low Potential (Low Elevation) for the Central Mountains, Northeast Manti Subunit, 1994 - 2009

Low Potential Winter Range**Northeast Manti (n=8)**

Year	Score	Ranking
1994	42	Fair
1998/99	57	Good
2004	32	Fair
2009	43	Fair-Good

Summary:

Critical low elevation winter ranges on the Northeast Manti subunit support high densities of deer, particularly during heavy winters. Browse utilization by deer as well as by domestic sheep and cattle utilizing these ranges is very heavy. The primary browse species on these critical winter ranges are Wyoming big sagebrush and Mexican Cliffrose. This area had a severe sagebrush die-off at low elevations during the extreme drought years of 2002 and 2003. This resulted in a significant reductions in browse cover and abundance as well as high decadence, particularly when the area was surveyed in 2004. Since then, these indices improved somewhat with a more favorable precipitation pattern in recent years. Although much of the mature sagebrush community is decadent or dead today, there are an abundance of seedling shrubs being recruited. The grass and forb communities have remained relatively stable over the past 15 years. As a result, the DCI has improved slightly and is comparable to that found in 1994.

The carrying capacity of critical low elevation winter ranges has been reduced over the past decade as a result of sagebrush die-offs, oil and gas development, and over-utilization. Extensive winter range improvement projects have been implemented to improve this habitat. Winter ranges at slightly higher elevations appear to be healthy and show little use, even during light winters.

Unit 16c Central Mountains, Southeast Manti Subunit

Average DCI Scores for Low Potential (Low Elevation) and Mid-Level Potential Winter Ranges for the Central Mountains, Southeast Manti Subunit, 1994 - 2009

Low Potential Winter Range			Mid-Level Potential Winter Range		
Southeast Manti (n=8)			Southeast Manti (n=17)		
Year	Score	Ranking	Year	Score	Ranking
1994	35	Fair	1994	48	Poor-Fair
1999	40	Fair	1999	65	Fair-Good
2004	38	Fair	2004	54	Fair
2009	42	Fair	2009	58	Fair

Summary:

Vegetation trends are dependent upon annual and seasonal precipitation patterns. When the range trend data was collected on this unit in 2009, percent annual precipitation was below drought levels at approximately 65% of normal, the lowest annual mean recorded in 20+ years. The units annual precipitation was below 75% of the normal annual mean (drought conditions) in 1986, 1989, 2002, 2003 and 2008.

Browse trends for Mountain big sagebrush increased in density as a result of recruitment. Wyoming big sagebrush also increased in density primarily due to an increase in young plants. Decadence decreased significantly again in 2009 to more moderate levels. Black sagebrush also increased in density primarily due to an increase in young plants.

Herbaceous understory: The median grass nested frequency trend was between the high of 1999 and the low of 2004. Percent cover nested frequency was highest in 2009 and lowest in 2004. Cheatgrass was sampled on only a few studies at very low frequency and cover. The mean perennial forb sum of nested frequency was similar to 2004. The mean cover of perennial forbs decreased significantly from 2004 to 2009. No noxious weeds were sampled on the studies in this herd unit.

Desirable Components Index

Five of the studies that sample deer winter habitat, 16C-22, 16C-32, 16C-33, 16C-36, and 16C-40, are considered to be within the low potential scale for the deer Desirable Components Index (DCI). The mean DCI ranking for these studies has remained relatively stable at Fair over the sample years.

Nineteen studies, 16C-13, 16C-14, 16C-15, 16C-17, 16C-18, 16C-20, 16C-23, 16C-24, 16C-25, 16C-26, 16C-27, 16C-28, 16C-29, 16C-31, 16C-34, 16C-35, 16C-41, 16C-42 and 16C-43, are considered to be within the mid-level potential scale for the deer DCI on this unit. The mean mid-level potential DCI ranking of the unit increased from poor-fair to fair-good from 1994 to 1999 then decreased to fair in 2004 and 2009.

Three studies, 16C-19, 16C-30 and 16C-44, are considered to be within the high potential scale for the deer DCI on this unit. There was little change in the mean high potential DCI ranking and scores remained similar over the sample years with a ranking of good.

APPENDIX - SUBUNIT HUNT BOUNDARY DESCRIPTIONS

Central Mountains, Nebo

Juab, Millard, Sanpete, Sevier and Utah counties—Boundary begins at US-6 and I-15 at Spanish Fork; southeast on US-6 to US-89 near Thistle; south on US-89 to US-50 at Salina; northwest on US-50 to I-15 at Scipio; north on I-15 to US-6 at Spanish Fork. Excludes all CWMUs. USGS 1:100,000 Maps: Maps: Delta, Manti, Nephi, Provo, Salina

Central Mtns, Manti/San Rafael

Carbon, Emery, Sanpete, Sevier and Utah counties—Boundary begins US-6 and US-89 in Spanish Fork Canyon; southeast on US-6 to I-70; east on I-70 to the Green River; south along this river to the Colorado River; south along this river (and the west shore of Lake Powell) to SR-95; north on SR-95 to SR-24 (hunters may harvest deer within 2 miles south of SR-24 between SR-95 and the Notom Road); west on SR-24 to Caineville and the Caineville Wash road; north on this road to the Cathedral Valley road; west on this road to Rock Springs Bench and the Last Chance Desert road; north on this road to the Blue Flats road; north and east on this road to the Willow Springs road; north on this road towards Windy Peak and the Windy Peak road; north on this road to I-70; west on I-70 to US-89; north on US-89 to US-6 in Spanish Fork Canyon.

**DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 17
(Wasatch Mountains)
April 2012**

BOUNDARY DESCRIPTION

Salt Lake, Summit, Wasatch, Duchesne, Carbon, Utah counties - Boundary begins at the junction of I-15 and I-80 in Salt Lake City; east on I-80 to US-40; south on US-40 to SR-32; east on SR-32 to SR-35; southeast on SR-35 to SR-87; south on SR-87 to Duchesne and US-191; south on US-191 to US-6; northeast on US-6 to I-15; north on I-15 to I-80 in Salt Lake City.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	17268	31.6%	687185	62.0%	104466	21.7%
Bureau of Land Management	0	0%	12105	1.1%	8768	1.8%
Utah State Institutional Trust Lands	0	0%	34450	3.1%	3939	.8%
Native American Trust Lands	4732	8.6%	20930	1.9%	51061	10.6%
Private	28660	52.4%	297425	26.8%	240366	50.0%
Department of Defense	0	0%	0	0%	0	0%
USFWS Refuge	0	0%	0	0%	0	0%
National Parks	235	.4%	0	0%	0	0%
Utah State Parks	401	.7%	9153	.8%	13462	2.8%
Utah Division of Wildlife Resources	3433	6.3%	47363	4.3%	58330	12.1%
TOTAL	54729	100%	1108611	100%	480392	100%

UNIT MANAGEMENT GOALS

- Expand and improve mule deer populations within the carrying capacity of available habitats and in consideration of other land uses.
- Provide a diversity of high-quality hunting and viewing opportunities for mule deer throughout the unit.

- Conserve and improve mule deer habitat throughout the unit with emphasis on crucial ranges.

POPULATION MANAGEMENT OBJECTIVES

Long Term Target Winter Herd Size - population size of 40,800 wintering deer (modeled number).

Avintaquin subpopulation:	3,200
Currant Creek subpopulation:	15,000
Wasatch West subpopulation:	20,600
Salt Lake subpopulation:	2,000

Herd Composition –

All Wasatch Mountains subunits are General Season subunits and will be managed for a 3-year average postseason buck to doe ratio in accordance with the statewide plan.

POPULATION MANAGEMENT STRATEGIES

Monitoring

- Population Size - Winter population size will be estimated using a computer model that was developed to utilize harvest data, postseason and spring classifications and radio collar based survival estimates.
- Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, tooth cementum annuli analysis, uniform harvest surveys and field bag checks.
- Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the use of checking stations. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck: doe ratios

Limiting Factors (May prevent achieving management objectives)

- Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.
- Habitat - Public land winter range availability, landowner acceptance and winter range forage conditions will determine herd size. Excessive habitat utilization will be addressed with hunting.
- Predation - Follow DWR predator management policy:

- If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.
- If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.
- Highway Mortality - Work with UDOT, Counties, Universities, local conservation groups, and landowners to minimize highway mortality by identifying locations of high deer-vehicle collisions and erecting sufficient wildlife crossing structures in those locations. Evaluate the effectiveness of the crossing structures over time and implement new technologies to improve future wildlife crossing structures.
- Illegal Harvest - Support law enforcement efforts to educate the public concerning poaching and reduce illegal taking of deer.

HABITAT MANAGEMENT OBJECTIVES

- Maintain mule deer habitat throughout the unit by protecting and enhancing existing crucial habitats and mitigating for losses due to natural and human impacts.
- Improve the quality and quantity of vegetation for mule deer on crucial range.
- Provide improved habitat security and escapement opportunities for deer.

HABITAT MANAGEMENT STRATEGIES

- Continue to monitor permanent Big Game Range Trend Studies of crucial mule deer range across the unit.
- Continue annual seasonal range rides and range assessments to evaluate forage condition and utilization.
- Work with land management agencies, conservation organizations, private landowners, and local leaders through the regional Watershed Restoration Initiative working groups to identify and prioritize mule deer habitats that are in need of enhancement or restoration.
- Initiate broad scale vegetative treatment projects to improve mule deer habitat with emphasis on drought or fire damaged sagebrush winter ranges, ranges that are being taken over by invasive annual grass species, and ranges being diminished by encroachment of conifers into sagebrush or aspen habitats.
- Properly manage elk populations to minimize competition with mule deer on crucial ranges.
- Work with state and federal land management agencies to properly manage livestock to enhance crucial mule deer ranges
- Minimize impacts and mitigate for losses of crucial habitat due to human impacts and energy development.

- Work with county, state, and federal agencies to limit the negative effects of roads by reclaiming unused roads, properly planning new roads, and installing fencing and highway passage structures where roads disrupt normal mule deer migration patterns.

PERMANENT RANGE TREND SUMMARIES

Unit 17bc, Wasatch Mountains, Currant Creek, and Avintaquin Subunits

The following table summarizes the condition of deer winter range on Unit 17bc, as indicated by DWR permanent Big Game Range Trend studies:

Year	Mountain Brush Sites (n=1)		Mountain Big Sagebrush Sites (n=7)		Wyoming Big Sagebrush Sites (n=8)	
	score	Ranking	score	Ranking	score	ranking
1995	83	Good	59	Fair	49	Good
2000			67	Fair-Good	50	Good
2005	72	Fair-Good	64	Fair-Good	46	Fair-Good
2010	90	Good-Excellent	73	Good	47	Good

Winter range is the critical habitat factor on these subunits. Approximately half of the 200,000 plus acres of winter range is owned and managed by the State while the other half is in private ownership. Most of the privately owned winter range is currently under threat of cabin site & ranchette development (Davis et. al. 1995).

All 16 range trend study sites on these subunits are located in mule deer winter range. Vegetation varies from Pinyon-Juniper at lower elevations to sagebrush-grass and mountain brush communities at the higher elevations.

A total of 16 study sites were read on these subunits in 2010. Range trend varies depending upon the sites ecological potential. The Mid to High potential sites are mostly in Good-Excellent condition. The Low potential sites range from Fair to Excellent. The low potential sites are the most critical deer winter range.

Eight of the study sites are located at sites with a low ecological potential. Of those 8 sites, 5 are in Fair condition, 1 is in Good condition, 1 is in Good-Excellent condition, and 1 is in Excellent condition. Several of these sites have suffered from the drought caused sagebrush die-off in 2003. They are recovering slowly.

Seven study sites are located at sites with a mid to high range ecological potential. Only one of these sites is in Fair condition, three are in Good condition, and 3 are in Good-Excellent condition. These areas did not experience browse die-offs during the drought.

Unit 17a, Wasatch Mountains, West Subunit

There are 29 total permanent winter range trend study sites on this portion of the unit. There are nine sites in the Diamond Fork area, four sites in the Hobble Creek and five in

the Timpanogos areas. Some study sites were suspended since the 1997 survey. In 2002, only 9 sites had a higher Desired Components Index figure showing an improvement in habitat quality. The overall DCI rating is "Fair" at 52 down from 57. Olsen (1976) estimated 72,209 acres of severe winter range, a bulk of which is in private ownership and of low productivity. Winter habitat is limited in by quality and quantity. Housing developments in recent years have consumed much of this important winter range and will continue to do so in the future. Most winter range has been reduced to a narrow bench above the communities of Alpine, Pleasant Grove, Orem, Springville and Mapleton. Essential vegetation types monitored include antelope bitterbrush, true mountain mahogany, mixed mountain browse, mixed oakbrush/sagebrush, and Stansbury cliffrose. There are 11 range trend study sites around the Heber area of the Wasatch Mountains herd unit. All are located within winter range with the majority being on sagebrush-grass type, two on oakbrush type and one on bitterbrush type. The DCI data has increased only on four of the trend sites. Another 4 have only decreased slightly or are unchanged. DCI rating (52) indicates "Fair" habitat. However, the majority of sites have poor quality herbaceous under-story composition with weeds and cheatgrass making up the major portion of the vegetation. This composition is largely due to fires and heavy grazing by livestock in the past. This situation produces abundant fuel during wet years and wildfires are a concern. Much of the winter range (50%) is privately owned and development was a concern at the time of the last study in 2002. Since then, development has accelerated and some of the most critical range is being converted to housing. Division of Wildlife Resources, State Parks as well as federal lands will be the key to the survival of deer into the future on this portion of the unit.

Unit 17, Wasatch Mountains/Salt Lake County Subunit

Range trend studies have not been done on this subunit since 1983. Lack of access to trend study plots that have not been destroyed by development has resulted in these studies being abandoned. Very little winter range is available on this subunit and deer are forced to winter in an urban setting during more severe winters.

SUB-UNIT	DCI Score	Rating Range	Classification	Current(2011) Population	Proposed Objective	Long Term Objective	Percent Change
Wasatch West	52	50-64 Fair	Fair	17,486	20,600	20,600	0
Salt Lake	NA	NA	NA	1,676	2,000	2,000	0

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX

Unit 17-Wasatch Mountains, Avintaquin Subunit

Beginning at Duchesne; then south on Hwy US-191 to the Reservation Ridge Road; westerly and northerly on this road to Big Beaver Springs Road; northerly on this road to Big Beaver Springs and Beaver Canyon; northeasterly along this canyon to the Strawberry River; easterly

along this river to Duchesne.

Unit 17-Wasatch Mountains, Currant Creek Subunit

Beginning at Duchesne; then north on Hwy SR-87 to Hwy SR-35; northwesterly on SR-35 to Wolf Creek Pass and the Provo River-Duchesne River drainage divide; south along this drainage divide to Heber Mountain and the Strawberry River-Currant Creek drainage divide; southeast along this divide to Hwy US-40 and the Soldier Creek Dam road; south on this road to the Strawberry River; east along this river to Duchesne.

Unit 17-Wasatch Mountains, Price River Drainage Subunit

Beginning at the junction of Hwy US-191 and the Reservation Ridge road; west on Reservation Ridge road to the Right Fork of the White River road; southwest on this road to Hwy US-6; southeasterly on Hwy US-6 to the junction of US-191; northeasterly on US-191 to the Reservation Ridge road junction.

Unit 17-Wasatch Mountains, Salt Lake Subunit

Beginning at the junction of Hwy I-15 and I-80 in Salt Lake City; then easterly on I-80 to Hwy US-40; southerly on US-40 to the Summit Wasatch county line; southwesterly along this county line to the Salt Lake-Wasatch county line; southwesterly along this county line to the Salt Lake-Utah county line; southwesterly along this county line to I-15; northerly on I-15 to I-80.

Unit 17-Wasatch Mountains, Wasatch West Subunit

Beginning at Hwy I-15 and the Utah-Salt Lake county line; then easterly along this county line to the Utah-Wasatch county line; northerly along this county line to the Wasatch-Summit county line; easterly on this county line to Hwy US-40; westerly on this road to SR-35; east on this road to Wolf Creek Pass and the Provo River-Duchesne River drainage divide; south along this drainage divide to Heber Mountain and the Strawberry River-Currant Creek drainage divide; southeast along this divide to Hwy US-40 and the Soldier Creek Dam road; south on this road to the Strawberry River ; easterly along this river to Beaver Canyon; southwesterly on this canyon to the Reservation Ridge road; southerly on this road to the Right Fork of the White River road; southwesterly on this road to Hwy US-6; westerly on US-6 to I-15; northerly on I-15 to the Salt Lake-Utah county line.

**DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 18
(Oquirrh-Stansbury)
April 2012**

BOUNDARY DESCRIPTION

Salt Lake, Utah and Tooele counties - Boundary begins at the junction of I-15 and I-80; south on I-15 to SR-73; west on SR-73 to SR-36; south on SR-36 to the Pony Express road located just south of Faust; west on this road to the Skull Valley-Dugway-Timpie road; north on this road to I-80 at Rowley Junction; east on I-80 to I-15.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	YEARLONG RANGE		SUMMER RANGE		WINTER RANGE	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Ownership						
Forest Service	0	??	48386	28.8%	20269	7.2%
Bureau of Land Management	0	??	45,888	27.3%	88,076	31.3%
Utah State Institutional Trust Lands	0	??	5,727	3.4%	20319	7.2%
Native American Trust Lands	0	??	28	0%	28,777	10.2%
Private	0	??	64177	38.2%	108,703	38.6%
Department of Defense	0	??	3,969	2.4%	15,263	5.4%
Utah State Parks	0	??	0	0%	0	0%
Utah Division of Wildlife Resources	0	??	0	0%	0	0%
TOTAL	0	??	168175	100%	281407	100%
Range Total from last plan (2001)	0	??	201465	100%	222082	100%
Change (+/-)	0	??	-33,290	-16.5%	+59325	+27%

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing. Balance deer herd impacts on human needs, such as private property rights, agricultural crops and local economies. Maintain the population at a level that

is within the long term capability of the available habitat to support.

POPULATION MANAGEMENT OBJECTIVES

- < Target Winter Herd Size - Achieve a target population size of 10,600 wintering deer.

Unit 18

1994 – 2005 Objective 10,600

2006 – 2015 Objective 10,600

Change 0

5 year Winter Herd Size – Manage for a 5-year target population of 10,600 wintering deer. Where winter range is the limiting factor, reduce current populations by 20% on any subunit when weighted DCI score falls in to “poor” classification or below. On units where winter range condition is classified as “fair” or better deer populations will be allow to expand toward current long-term objectives.

Unit	DCI Score	Fair DCI range for unit 18	Classification	Current Population	Proposed Objective
Oquirrh/Stansbury 18	47	38-54 fair	fair	9,400	10,600

Herd Composition-- Maintain an average postseason buck to doe ratio in accordance with the statewide plan.

Harvest – General Buck Deer hunt regulations, using archery, rifle, and muzzleloader hunts apply to Oquirrh/Stansbury Unit 18.

POPULATION MANAGEMENT STRATEGIES

Monitoring

- < Population Size - Utilizing harvest data, postseason and spring sex and age classifications and mortality estimates, a computer model has been developed to estimate winter population size.
- < Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.
- < Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons.

Limiting Factors (May prevent achieving management objectives)

- < Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.
- < Hunter Access - Excessive habitat utilization will be addressed. Because of the large amount of private land on this unit, it=s location and the number of owners, public access for deer hunting will continue to be a problem. Formation of the Heaston East CWMU may help in this regard on the North Oquirrh Mountains.

- < Habitat - At present, the availability of high quality summer range may be more limiting to this deer population than winter range. Range condition, however, of winter ranges is a long-term problem. Encroachment by juniper trees and the resultant loss of forage production, diversity and quality is very widespread. The problem is especially apparent on the Stansbury Mountains.
- < Predation - Refer to DWR predator management policy.
 - Assess need for control by predator species, geographic area and season of year.
 - Seek assistance from Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort.
 - Concentrate control efforts during and immediately prior to the fawning period.
 - Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.
- < Highway Mortality - Cooperate with the Utah Dept. Of Transportation in construction of highway fences, passage structures and warning signs etc..
- < Illegal Harvest - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an Action Plan developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

- < Provide a long-term continuing base of habitat quantity and quality sufficient to support the stated population objectives.

HABITAT MANAGEMENT STRATEGIES

- < Work toward long-term habitat protection, preservation and improvement through the use of agreements with federal and local agencies and the use of Conservation Easements on private lands.
- <
- < Continue to restore and improve sagebrush steppe habitats critical to deer according to DWR's Habitat Initiative. Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as reseeding, controlled burns, water developments etc. on public and private lands.
- < Continue to monitor the permanent range condition and trend studies located throughout the winter range.
- < Implement the Habitat Management Plan for the Carr Fork Wildlife Management and Reclamation Area as a means for improving winter range conditions on the west side of the Oquirrh Mountains.
- < Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as reseeding, controlled burns, water developments etc. on public and private lands.

- < Cooperate with federal land management agencies and local governments in developing and administering access management plans for the purposes of habitat protection and escape or security areas.

PERMANENT RANGE TREND SUMMARIES

Unit 18, Oquirrh-Stansbury 2002

There are 18 trend range sites on the Oquirrh range. Four of these sites are in critical winter range, Seven on winter range, four on transitional winter / spring - fall range, and three on summer range. The most recent trend gathered on these sites was 2002. Summer range makes up about 48% of the area. Winter range comprises 48% of the area. During severe winters the available winter habitat is reduced in half. Another major concern is that 63% and 45% of the summer and winter range respectfully is under private ownership.

There are 11 trend range sites on the Stansbury mountain range. Summer range is limited to above 6800 ft contour where it makes up 45% of the range that is classified as suitable for big game. The remainder of the range is considered winter range (55%). The portion of private lands on this big game habitat is 6% and 14% of the summer and winter range respectively.

Overall soil, browse and herbaceous trends are stable to improving. Only three soil, one browse, and three herbaceous sites showed down or slightly down trends. Many sites showed a decline in forb species going from an average of 18 in 1997 to 12 in 2002.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 19
(West Desert)
April 2012

BOUNDARY DESCRIPTION

Tooele, Utah, Juab and Millard counties - Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to the Dugway road at exit 77, Rowley Junction; south on this road to 14-mile road (Dugway Valley road); south on 14-mile road to the Pony Express Road; east on this road to SR-36; north on SR-36 to SR-73; east on SR-73 to I-15 in Lehi; south on I-15 to Exit 207 and Mills Road; west on this road to the Sevier River; north along this river to SR132; west on 132 to US 6; south on US-6 to its junction with US-50 near Delta; west on US-50 & 6 to the Utah-Nevada state line; north along this state line to I-80 at Wendover.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	YEARLONG RANGE		SUMMER RANGE		WINTER RANGE	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service		0%	48468	22.2%	21282	3.9%
Bureau of Land Management	541579	87.8%	115988	54.8%	412392	75.9%
Utah State Institutional Trust Lands	46914	7.6%	8486	4%	32716	6%
Native American Trust Lands	0	0%	10711	5.1%	9877	1.8%
Private	5776	.9%	27961	13.2%	64159	11.8%
Department of Defense	22299	3.6%	0	0%	2688	.5%
USFWS Refuge	0	0%	0	0%	0	0%
Bankhead Jones	0	0%	0	0%	0	0%
Utah State Parks	0	0%	0	0%	0	0%
Utah Division of Wildlife Resources	0	0%	0	0%	0	0%
TOTAL	616568	100%	211614	100%	543114	100%
Range total from past plan (2002)	353,632	100%	248912	100%	945123	100%
Change (+/-)	+262936	+74%	-37298	-15%	-402009	-42.5%

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing. Balance deer herd impacts on human needs, such as private property rights, agricultural crops and local economies. Maintain the population at a level that is within the long-term capability of the available habitat to support.

POPULATION MANAGEMENT OBJECTIVES

- < Target Winter Herd Size - Achieve a long-term combined target population size of 11,200 wintering deer (modeled number)

Unit 19

Target Objective 2002-2005	11,200
Target Objective 2006-2011	11,200
Change	0

5 year Winter Herd Size – Manage for a 5-year target population of 11,200 wintering deer. Based on overall changes of habitat Desirable Components Index (DCI). Where winter range is the limiting

factor, reduce current populations by 20% on any subunit when weighted DCI score falls in to “poor” classification or below. On subunits where winter range condition is classified as “fair” or better deer populations will be allow to expand toward current long-term objectives.

Subunit	DCI Score	Fair DCI range for unit 19	Classification	Current Population	Proposed objective
West Desert 19a	49.5	42-57 Fair	Fair	6,900 Combined	11,200 combined
Vernon 19b	50	46-61 Fair	Fair	6,900 combined	11,200 combined

Herd Composition

- < West Desert Mt Range (19a,c); maintain a three year average postseason buck to doe ratio in accordance with the statewide plan.
- < Vernon (19b); (limited entry portion of unit 19); maintain a three year average postseason buck to doe ratio ranging from 25-35:100.
- < Harvest – General Buck Deer hunt regulations, using archery, Rifle, and Muzzleloader hunts apply on the West Desert Mountain Ranges 19a. Limited Entry hunt regulation for Archery, Rifle and Muzzleloader apply to Vernon subunit 19b

POPULATION MANAGEMENT STRATEGIES

Monitoring

- < **Population Size** - Utilizing harvest data, postseason and spring classifications and mortality estimates, a computer model has been developed to estimate winter population size. Because a part of this population is highly migratory in nature, periodic monitoring and counts of deer passing between the Sheeprock/Tintic mountains area and the House Range/Swasey Mountain/Conger Mountain areas will be required. A remote sensing apparatus may be used for this purpose.
- < **Buck Age Structure** - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.
- < **Harvest** - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. The targeted winter population should result in an expected annual buck harvest of perhaps 800 deer when normal conditions occur, but recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

<

Limiting Factors (May prevent achieving management objectives)

- < **Crop Depredation** - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.
- < **Habitat** - Deer numbers in this area are primarily limited by the amount and quality of summer range and water distribution. Preservation and even enhancement of the very limited areas of higher altitude good quality summer range is very important. At present, only the Deep Creek Mountains offer any significant expanse of this type of habitat. Excessive habitat utilization will be addressed.
- < **Predation** - Refer to DWR predator management policy.
 - Assess need for control by species, geographic area and season of year.
 - Seek assistance from Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Concentrate control efforts during and immediately prior to the fawning period. This predator management plan for the Sheeprock Mountains, which focuses primarily on coyote control for the purpose of enhancing fawn survival, is currently being implemented.
 - Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.
- < **Illegal Harvest** - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an Action Plan developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

- < Provide a long-term continuing base of habitat quantity and quality sufficient to support the stated population objectives.

HABITAT MANAGEMENT STRATEGIES

- < Continue to monitor the permanent range trend studies located throughout the unit. These are located on both summer and winter range.
- < Continue to restore and improve sagebrush steppe habitats critical to deer according to DWR's Habitat Initiative. Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as reseeding, controlled burns, water developments etc. on public and private lands.
- < Maintain and/or enhance forage production through direct range improvements throughout the unit to achieve population management objectives.
- < Work with private and federal agencies to maintain and protect critical summer ranges from future losses or degradation. Continue the cooperative effort to develop water sources to enhance deer and other wildlife distribution.

PERMANENT RANGE TREND SUMMARIES (Added 2001)

Unit 19a, West Desert/Deep Creek Subunit (2002)

There are 8 range trend study sites on the deep creek mountain range. Seven are on BLM administered land while one is on Goshute Indian Reservation Land. Four study sites are present on winter ranges in Trail Gulch, Ochre Mountain, Sevy Canyon and Durse Canyon. Three summer range studies Chokeycherry, Granite, and the Basin.

There were no upward trends for soil, herbaceous, or browse components in 2002. Soil herbaceous, and browse trends were reported stable on two sites while downward on two others.

Downward trends can be attributed to periods of drought. Drought increased bare soil, increased decadence, reduced vigor, decline in reproduction and a decline in overall forbs.

Unit 19b, West Desert/Vernon Subunit (2002)

The Vernon subunit has 9 trend sites of which 8 were read in 1997. Five sites are summer range and three are winter range. The South Pine Canyon transect was not read due to fire not leaving any browse species. In the summer of 1996 over 14,000 acres burned in much of the summer range. The Vernon was closed to deer hunting in 1997 and reopened in 2000.

In 2002 range trends were largely driven by 3 years of drought conditions. In combination with drought, mormon cricket use resulted in lower abundance of herbaceous and primary forbs.

Nine of twelve Browse sites showed stable trends, while only three sites had downward trends. Gentle slopes with vegetation and litter cover help keep erosion to a minimum. Herbaceous under-story appears to be stable on most sites but has declined on burned areas. In 1998 the Forest Service burned stands of thick juniper in the West Government Creek area in an effort to improve site conditions.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX

Unit 19a, West Desert Mountain Ranges Subunit

Tooele, Utah, Juab and Millard counties - Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to the Dugway road at exit 77, Rowley Junction; south on this road to the 14-mile road (Dugway Valley road); south on this road to SR-174; east on SR-174 to US-6; south on to US-6; south on US-6 to US-6/50; west on US-6/50 to the Utah/Nevada state line; North on this state line to I-80 in Wendover. Excludes all native American Trust Lands within This boundary. Excludes all CWMUs. USGS 1:100,000 Maps: Bonneville Salt Flats, Currie, Delta, Ely, Fish Springs, Kern Mountains, Lynndyl, Rush Valley, Tooele, Tule Valley, Wildcat Moutnain. Boundary questions? Call DWR Springville office, (801) 491-5678.

This unit excludes the following limited entry unit.

Tooele, Juab, and Millard counties - Boundary begins at SR-36 and the Pony Express road; southeast on SR-36 to US-6; southwest on US-6 to SR-174 (i.e. the IPP road); northwest on SR-174 to the Dugway Valley road; north on this road to the Pony Express road; northeast on this road to SR-36. USGS 1:100,000 Maps: Lyndyl, Delta, Fish Springs, Rush Valley. Boundary questions? Call DWR Springville office, (801) 491-5678.

Unit 19b, West Desert/Vernon/ Subunit

Tooele, Juab, and Millard counties - Boundary begins at SR-36 and the Pony Express road; southeast on SR-36 to US-6; southwest on US-6 to SR-174 (i.e. the IPP road); northwest on SR-174 to the Dugway Valley road; north on this road to the Pony Express road; northeast on this road to SR-36. USGS 1:100,000 Maps: Lynndyl, Delta, Fish Springs, Rush Valley. Boundary questions? Call DWR Springville office, (801) 491-5678.

Unit 19c, West desert /Subunit

Tooele, Juab, Utah and Millard counties – Boundary begins at I-15 and SR-73 in Lehi; south on I-15 to Exit 207 and Mills road; west on this road to the Sevier River; north along this river to SR-132; west on SR-132 to US-6; north on US-6 to SR-36; north on SR-36 to SR-73; east on SR-73 to I-15 in Lehi. Excludes all CWMUs USGS maps: Delta Lyndyl, Manti, Nephi, Provo, Rush Valley. Boundary questions? Call DWR Springville office, (801) 491-5678.

This unit excludes the following limited entry unit.

Tooele, Juab, and Millard counties - Boundary begins at SR-36 and the Pony Express road; southeast on SR-36 to US-6; southwest on US-6 to SR-174 (i.e. the IPP road); northwest on SR-174 to the Dugway Valley road; north on this road to the Pony Express road; northeast on this road to SR-36. USGS 1:100,000 Maps: Lyndyl, Delta, Fish Springs, Rush Valley. Boundary questions? Call DWR Springville office, (801) 491-5678.